



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Miyuki FUKASAWA et al. Art Unit: 1615
Serial No.: 10/714,950 Examiner: Susan T. TRAN
Filing Date: November 18, 2003
For: MICROCAPSULE AND PRODUCTION METHOD THEREOF

Assistant Commissioner for Patents
Washington, D. C. 20231

DECLARATION PURSUANT TO RULE 132

I, Miyuki FUKASAWA, hereby sincerely and solemnly declare that

1. I graduated in Faculty of Science and Technology from Sophia University in March, 2001. Since April, 2001, I have been employed by Shin-Etsu Chemical Co., Ltd., assignee of the above-identified application, where I was engaged in research and development of cellulose ethers at the Specialty Chemicals Research Center from April, 2001 to June, 2006. I am one of the inventors of the above-identified application and I am familiar with the subject matter disclosed in the application as well as the disclosures in the references cited against the claims.

2. The following experiment was carried out to provide the effect of addition of an oil-based water-immiscible core material into a solution of a cellulose derivative and gum arabic in accordance with the description of Zgoulli et al. (US 5,456,985).

Experiment:

The 40 g of hydroxypropylmethylcellulose phthalate (HP-55S manufactured by Shin-Etsu Chemical Co., Ltd.) was mixed and then dissolved into 180g of an aqueous 0.5N sodium hydroxide solution. The 60g of the resulting solution was then mixed with 40g of deionized water to give an anionic polymer solution (pH 5.3). Next, 0.5g of gum arabic (manufactured by Wako Pure Chemical Industries, Ltd.) was added to deionized water to give a 1% by weight aqueous gum arabic solution.

The anionic polymer solution and the aqueous gum arabic solution were mixed with magnetic stirring (300rpm). The 0.2mg of riboflavin phosphate sodium (manufactured by

Wako Pure Chemical Industries, Ltd.) was added dropwise to the resulting mixture.

The polymer and the gum arabic formed a complex so that the sodium riboflavin was prevented from being enclosed suitably and separated upward.

3. As described in Experiment, mixing the enteric anionic cellulose derivative and the gum arabic in advance in the same manner as in Zgoulli et al. resulted in separation of the oil-based core material (riboflavin phosphate sodium) from the complex of the cellulose derivative and the gum arabic. The significance of the present invention that the suspension of an oil-based water-immiscible core material in an aqueous solution of gum arabic is added to an aqueous solution of an enteric anionic cellulose derivative should be recognized.

4. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent resulting therefrom.

Dated: 15th Nov. 2007

Miyuki Fukasawa